

What is claimed is:

1. A refractometric apparatus for use with fluids comprising:
means for defining an optical path;
a reticle located along the optical path, the reticle further comprising markings that increase in the direction of increased water content in a fluid;
a prism located along the optical path in a spaced relation to the reticle, the prism having a face disposed toward a sample of the fluid, the prism being located to receive light for illuminating the sample of the fluid, whereby a transition between light and darkness is a function of a water content in the fluid;
a second prism located along the optical path between the prism and the reticle; and
a temperature sensitive means operatively engaging the second prism for pivotal motion of the second prism in response to temperature changes so as to compensate for temperature changes by altering the optical path in response to such changes;
whereby the reticle provides a reading relating to the water content of the fluid.
2. The refractometric apparatus of Claim 1, wherein the fluid comprises sugar solutions, juices, salt solutions, antifreeze, and lubricants.
3. The refractometric apparatus of Claim 1, further comprising focusing means for forming an image on the reticle, the focusing means being disposed along the optical path between the second path and the reticle.
4. The refractometric apparatus of Claim 1, wherein the temperature sensitive means is pivotally coupled to the frame and further mechanically coupled to the second prism, the temperature sensitive means further comprising a bimetal strip and a bimetal spring.

5. The refractometric apparatus of Claim 4, wherein the fluid comprises sugar solutions, juices, salt solutions, antifreeze, and lubricants.
6. A refractometric apparatus for use with a fluid comprising:
means for defining an optical path;
an array of photosensitive elements located along the optical path, the array being electrically coupled to a character display;
a prism located along the optical path in spaced relation to the array of photosensitive elements, the prism having a face disposed toward a sample of the fluid, the prism being located to receive light for illuminating the sample of the fluid, whereby a transition between light and darkness is a function of a water content in the fluid;
a second prism located along the optical path between the prism and the array of photosensitive elements; and
a temperature sensitive means operatively engaged the second prism for pivotal motion of the second prism in response to temperature changes so as to compensate for temperature changes by altering the optical path in response to such changes;
whereby the character display provides a reading relating to the water content of the fluid.
7. The refractometric apparatus of claim 6, wherein the temperature sensitive means is pivotally coupled to the frame and further mechanically coupled to the second prism, the temperature sensitive means further comprising a bimetal strip and bimetal spring.
8. The refractometric apparatus of Claim 7, wherein the fluid comprises sugar solutions, juices, salt solutions, antifreeze, and lubricants.
9. The refractometric apparatus of Claim 6, wherein the fluid comprises sugar solutions, juices, salt solutions, antifreeze, and lubricants.

10. A method for measuring water content in a fluid for use with an apparatus comprising means for defining an optical path, critical angle prism, the critical angle prism having a face, a temperature compensation means, and a reticle disposed along the optical path, the method comprising:

- placing the fluid on the face of the critical angle prism;
- allowing light to enter the optical path through the fluid;
- compensating for temperature changes by altering the optical path in response to the ambient temperature; and
- observing a boundary between light and darkness on the reticle to measure water content of the fluid.

11. The method of Claim 10, wherein the fluid comprises sugar solutions, juices, salt solutions, antifreeze, and lubricants.

12. A method for measuring water content in a fluid for use with an apparatus comprising means for defining an optical path, critical angle prism, the critical angle prism having a face, a temperature compensation means, and an array of photosensitive elements disposed along the optical path and electrically couples to a character display, the method comprising:

- placing the fluid on the face of the critical angle prism;
- allowing light to enter the optical path through the fluid;
- compensating for temperature changes by altering the optical path in response to the ambient temperature; and
- observing a reading on the character display, the reading being indicative of a water content of the fluid.

13. The method of Claim 12, wherein placing the fluid comprises placing sugar solutions, juices, salt solutions, antifreeze or lubricants.

14. In a method of measuring water content in a fluid for use with an apparatus comprising means for defining an optical path, a critical angle prism,

the critical angle prism having a face, a temperature compensation means, and a reticle disposed along the optical path, a calibration method comprising:

placing the fluid on the face of the critical angle prism, the fluid being of a known water content;

allowing light to pass through the fluid and to enter the optical path; and

adjusting the optical path so that a boundary between light and darkness on the reticle impinges upon the reticle at a predetermined point.

15. The method of Claim 15, wherein the fluid comprises sugar solutions, juices, salt solutions, antifreeze, and lubricants.

16. In a method of measuring water content in a fluid for use with an apparatus comprising means for defining an optical path, a critical angle prism, the critical angle prism having a face, a temperature compensation means, and an array of photosensitive elements electrically coupled to a character display and disposed along the optical path, a calibration method comprising the steps of:

placing the fluid on the face of the critical angle prism, the fluid being of a known water content;

allowing light to pass through the fluid and to enter the optical path; and

adjusting the optical path so that a boundary between light and darkness impinges upon the array of photosensitive element at a predetermined point, producing a predetermined reading on the character display.

17. The method of Claim 16, wherein the fluid comprises sugar solutions, juices, salt solutions, antifreeze, and lubricants.